DOCUMENT RESUME

ED 032 211 RE 001 962

By-Okada, Tetsuo; And Others

Growth in Achievement for Different Racial, Regional and Socio-Economic Groupings of Students.

Office of Education (DHEW), Washington, D.C. Office of Program Planning and Evaluation.
Pub Date 16 May 69
Note-23p.
EDRS Price MF-$0.25 HC-$1.25
Descriptors-*Academic Achievement, Ethnic Groups, Mathematics, Metropolitan Areas, *Negro Students, Rural Youth, *Socioeconomic Status, Verbal Ability

The relationship between socioeconomic status and academic achievement was studied. Cross-comparisons were made of this relationship in terms of different racial-ethnic groups, various regions of the United States, and metropolitan-nonmetropolitan locations. Subjects were sixth, ninth, and twelfth graders from the North, the South, and the West. The study concluded that socioeconomic status is assuming increasing importance in school achievement for all students, and the achievement levels of high socioeconomic Negro students are lower in most instances than the achievement levels of low socioeconomic white students. Suggested explanations included the low educational level of most Negro parents and the differential dropout rates of racial and ethnic groups. A number of mediating factors were seen as possible causes of these results; therefore, caution must be exercised in trying to determine specific causal factors. References and tables are included. (RT)

ED032211

Working Paper
Does Not Reflect
Official Policy of
The Office of Education

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

OFFICE OF PROGRAM PLANNING AND EVALUATION

Division of Elementary and Secondary Programs

Growth in Achievement for Different Racial, Regional and Socio-Economic Groupings of Students

by

Tetsuo Okada
Wallace M. Cohen
George W. Mayeske

Technical Paper

Number 1

May 16, 1969

RE 001 962

OFFICE OF EDUCATION/U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

3.0 Growth in Achievement for Different Racial, Regional and Socio-Economic Groupings of Students

A student's socio-economic background has been shown to be related to his achievement levels (see Chapter 2.0, also Flanagan, et.al., 1964; Husén, 1967; Lesser, Fifer and Clark, 1965) as well as to his growth in achievement (Shaycoft, 1967). Usually, students from the higher socio-economic strata exhibit higher achievement levels and benefit more from their school experiences than do their lower socio-economic strata counterparts. Socio-economic backgrounds vary with the student's racial-ethnic group membership, region of the country and metropolitan/non-metropolitan location as well. For example, a higher proportion of non-white than white students may come from the lower socio-economic strata (SES) and there may be a larger proportion of high SES students in metropolitan than in non-metropolitan areas. This chapter compares the growth in achievement for these different groupings of students in grades six, nine and twelve. Although the Educational Opportunities Survey (EOS) data was collected at one point in time some of the tests used at these grade levels possessed an "interlocking" property or a property that allows one to relate on a common scale or metric, the test scores of students in say, grade six with those in grades nine and twelve. These "growth in achievement curves" have been developed for different sub-groups of students in order to show the magnitude of the differences in their achievement levels (often called "the achievement gap") and to suggest mechanisms that may account in part, for these differences.

3.1 Definition and Development of the Student Groups

This section describes the manner in which the different groups of students were defined and developed. These groups are: Region; Metropolitan/Non-Metropolitan (SMSA/Non-SMSA); Racial or Ethnic Group Membership and; Socio-Economic Status (SES) or level.

3.1.1 Regional Groupings

For this analysis, the United States was divided into three regions as follows:

Region A ("North"):

Connecticut	Maryland	New York
Dist. of Col.	Massachusetts	North Dakota
Delaware	Michigan	Ohio
Illinois	Minnesota	Pennsylvania
Indiana	Missouri	Rhode Island
Iowa	Nebraska	South Dakota
Kansas	New Hampshire	Vermont
Maine	New Jersey	Wisconsin

Region B ("South"):

Alabama	Kentucky	Oklahoma
Arizona	Louisiana	South Carolina
Arkansas	Mississippi	Tennessee
Florida	New Mexico	Texas
Georgia	North Carolina	Virginia
		West Virginia

Region C ("West"):

Alaska	Idaho	Utah
California	Montana	Washington
Colorado	Nevada	Wyoming
Hawaii	Oregon	

As may be seen, Region A ("North") actually contains the Northeast, Mid-Atlantic and Mid-West areas. Region B ("South") includes the Southeast

and Southwest while Region C ("West") is comprised of the Pacific Coast and Rocky Mountain states

3.1.2 Metropolitan/Non-Metropolitan Groupings

For this analysis students were classified as to whether they attended a school located in a Metropolitan (Standard Metropolitan Statistical Area or SMSA) or a Non-Metropolitan (Non-Standard Metropolitan Statistical Area or Non-SMSA) area.

3.1.3 Racial and Ethnic Group Membership

For this analysis students were classified on the basis of their response to a set of questions from the student questionnaire concerned with their racial and ethnic group membership, into the following groupings:

Negro	Oriental-American
White	Puerto-Rican
Indian-American	Mexican-American
	Other

The "Other" category was not included in these analyses.

3.1.4 Socio-Economic Status Groupings

Scores on the Socio-Economic Status Index described in Chapter 2, were used to define socio-economic levels. This index is a weighted linear composite of: Father's Educational Level; Father's Occupational Level; Mother's Educational Level; Number of Siblings; Number of Rooms in the Home; Number of Appliances and Reading Materials in the Home and the degree of Urbanness of the Community in which the Student Has Spent Most of His Life. The largest weights are given to Father's and Mother's Educational Level and to Father's Occupational Level. At each grade level the distribution of SES Index scores was cut into approximate thirds. Students with a score in the lower third of the distribution were designated Low SES, those in the middle third, Medium SES and those in the upper third, High SES. To insure against the possibility that a disproportionately large number of students from the South or from a Non-SMSA would fall in the Low SES category and a disproportionately large number of students from the North or from an SMSA would score in the High SES category, SES distributions were run by SMSA and Non-SMSA within each of the three regions. When these distributions were cut into approximate thirds it was found that the same cutting points could be used to define the three SES categories within each region and SMSA/Non-SMSA grouping as were used for the entire national group. Hence, direct comparisons between regions and SMSA/Non-SMSA groupings for different categories of SES and racial-ethnic group membership could be made. Perhaps another way of saying this is that low SES means much the same thing in the North as in the South and West and much the same thing in metropolitan as in non-metropolitan areas.

The numbers of students in each of these groups and sub-groups are given in Table 3.1(a) and 3.1(b).

TABLE 3.1 (a)

Number of Students by Race, Grade, and Socio-Economic Status Level for Total, United States

SMSA + Non-SMSA, Total U.S.

Grade	SES	Negro	White	American-Indian	Oriental	Puerto Rican	Mexican-American
6	Low SES	14791	4536	3958	86	14246	1487
	Med SES	18681	5617	6208	90	11396	1628
	High SES	12942	4000	4240	159	12418	2239
9	Low SES	20573	15366	1740	559	2488	3350
	Med SES	13136	3223	920	704	1053	2224
	High SES	3878	29915	290	448	258	715
12	Low SES	14663	11811	988	540	947	1630
	Med SES	7717	25461	455	602	435	911
	High SES	2626	25388	215	299	173	355

TABLE 3.1 (b)

Number of Students, Negro and White, by Grade, Socio-Economic Status Level, Region and SMSA/Non-SMSA

SMSA Only		Negro			White		
Grade	SES	North	South	West	North	South	West
6	Low	6586	1363	976	1688	351	367
	Medium	8217	1797	1437	1948	482	524
	High	5701	1151	1273	1439	318	443
9	Low	5214	4118	967	5508	1096	1015
	Medium	5137	3237	975	14725	2759	2408
	High	1843	950	425	15820	3058	3468
12	Low	2915	2970	617	4241	746	778
	Medium	2726	2082	553	12093	1987	2059
	High	1145	701	276	12974	2609	3478
Non-SMSA Only							
6	Low	1394	3668	804	537	1205	388
	Medium	1947	4272	1011	680	1526	457
	High	1241	2793	783	449	1013	338
9	Low	654	9576	44	1616	5150	981
	Medium	367	3367	53	3507	6579	2245
	High	80	555	25	2080	3888	1601
12	Low	456	7662	43	1396	3883	767
	Medium	205	2116	35	2945	4702	1675
	High	52	435	17	1742	3209	1376

3.2 Description of the Tests Used

The tests at grades six, nine and twelve that possessed this "interlocking" property and thus allowed for a common metric to be applied to them were:

(a) Verbal Ability - Educational Testing Service (ETS) School and College Ability Test Series (SCAT).

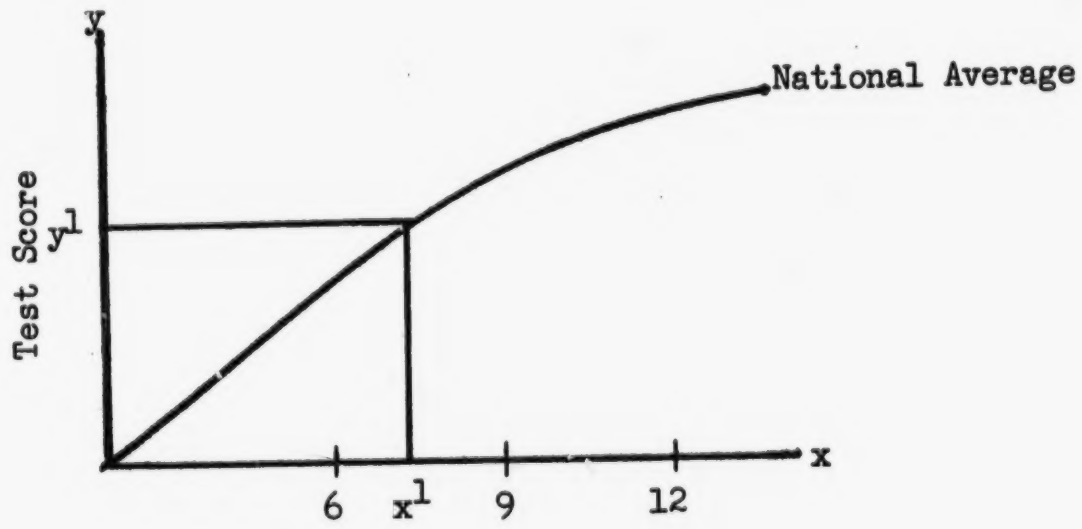
(b) Mathematics - ETS Squential Test of Educational Progress Series (STEP)

(c) Reading Comprehension - STEP

The foregoing tests were not interlocked for grades 1 and 3. None of the other tests that were used in the Survey possessed these interlocking properties.

3.3 Determination of a Grade Level Equivalent (GLE)

The average test scores obtained by students at grades six, nine and twelve were used to obtain their grade level equivalents in the following manner. A plot was made of average test score (y - axis) for grades 6, 9 and 12 (x - axis). A curve was then drawn connecting these points. To determine the grade level equivalent (GLE) for a sub-group



of students one finds their average test score y^1 on the y axis, reads from the point over to the curve and then straight down to its point x^1 on the x axis. This point on the x axis, x^1, is called the grade level equivalent (GLE) for the student or group of students having that test score. GLE's are used at different places in the text to help make group comparisons more meaningful.

3.4 Comparison of Test Score and Growth in Achievement Differences for Different Groupings of Students

With six racial-ethnic groups, three SES groups, three regions, two SMSA/Non-SMSA groups and totals, there are over 108 possible comparisons that could be made for each of three tests. All of these possible comparisons were scrutinized but are too numerous to include in this chapter. Those comparisons that are included were deemed to be of greater interest when the full number were examined with the greatest emphasis being given to racial-ethnic and SES comparisons. Because the Reading Comprehension and Verbal Ability tests are highly correlated (see Chapter 2) greater emphasis is usually given to the Verbal Ability test. The means and sample sizes for all of the groups are given in section 11.2.

The analyses will proceed from large to small geographic divisions--from general to more specific comparisons--as follows:

(a) Total, U.S. - All Races (3.4.1).

(b) Total, U.S. - SMSA vs Non-SMSA (Negro-White only) (3.4.2).

(c) Regional Groupings - SMSA + Non-SMSA (Negro-White only) (3.4.3)

(d) Regional Groupings - SMSA vs Non-SMSA (Negro-White only) (3.4.4)

3.4.1 Racial Comparisons for U.S. Totals

Since comparisons of all 6 racial groups are not possible in terms of regions or SMSA/Non-SMSA breakdowns (due to small sample size and high test score variances), analyses of American-Indians, Oriental-Americans, Puerto-Rican Americans and Mexican-Americans will be restricted to those for TOTAL, U.S.

(1) Verbal Ability

The table below shows the GLE's (based on national average scores) of the 6 racial groups in this study for Verbal Ability:

	Grade 6	Grade 9	Grade 12
Negro	4.6	7.0	8.8
White	6.6	9.8	12.9
Indian	4.9	7.7	10.5
Oriental	5.9	9.0	11.8
Puerto-Rican	3.6	7.0	9.3
Mexican	4.6	7.5	9.4

At grade 6, White and Oriental students have the highest GLE's followed by Indians, Negroes, Mexicans and Puerto-Rican students. White students are the only ones at or above the GLE of 6.0 at this grade.

At grades 9 and 12, the relative rankings remain the same for Whites, Orientals and American-Indians. At grade 12 the only change from grade 6 occurs when Puerto-Ricans and Negroes exchange places in rank order. At grade 9 the only students who have a GLE of 9.0 are Whites and Orientals, while at grade 12, White students are substantially ahead at grade level in their achievement.

The range of GLE's for each of the above racial groups when Socio-Economic Status (SES) levels are considered may be seen in the following table (analogous to the one preceding):

	SIX			NINE			TWELVE		
SES	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Negro	3.8	4.1	4.8	6.5	7.3	8.4	8.1	9.3	10.7
White	4.9	5.4	6.7	8.1	9.5	11.4	10.6	12.6	*
Indian	4.3	4.3	5.1	7.1	8.2	9.7	9.0	11.2	13.7
Oriental	3.8	4.7	6.1	8.0	9.3	10.3	10.7	11.8	*
Puerto-Rican	3.0	3.2	3.8	6.6	7.2	8.4	8.8	9.8	10.6
Mexican	3.7	3.9	4.8	6.9	7.8	9.0	8.9	9.8	11.6

Asterisk (*) denotes GLE $\geq$ 14.0.

This seccnd table enables one to see the range in GLE values at each of the given grades, when each group is divided into three SES levels. It may be seen that High SES Whites and Orientals both have GLEs greater than 6.0 at grade 6. At grade 9, High SES Indians and Mexicans join the High and Medium SES Whites and Orientals in achieving the GLE for this grade (viz., 9.0 or greater). At grade 12, High and Medium SES Whites and High SES Indians and Orientals are the only ones to achieve a GLE of 12 or greater.

From the table, it is apparent that both the medium and high SES groups in many instances have GLEs higher than the average GLEs given in the earlier table.

The increasing disparity in GLE between Low, Medium and High SES levels as students progress from the 6th to the 12th grades becomes evident in the following comparison of differences between High and Low SES in Verbal Ability:

	Grade 6	Grade 9	Grade 12
Negro	1.0	1.9	2.6
White	1.8	3.3	3.4 +
Indian	0.8	2.6	4.7
Oriental	2.3	2.3	3.3 +
Puerto-Rican	.8	1.8	1.8
Mexican	1.1	2.1	2.7

As the above table indicates, SES levels as previously defined appear to assume increasing importance in school achievement for all groups. Similar results were obtained for Mathematics and Reading Comprehension.

(2) Mathematics

Achievement levels in mathematics by SES level is shown in the table below:

	Grade 6			Grade 9			Grade 12		
SES:	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Negro	3.7	4.0	4.5	6.3	7.1	7.9	7.1	7.7	8.6
White	5.0	5.5	7.1	8.1	9.6	10.7	10.3	*	*
Indian	4.1	4.2	4.9	6.9	7.8	8.8	8.8	10.1	*
Oriental	4.2	4.8	6.1	8.6	10.0	11.1	10.3	12.8	*
Puerto-Rican	3.3	3.4	3.9	6.2	6.6	7.3	7.5	8.1	9.1
Mexican	4.0	4.0	4.7	6.7	7.7	8.5	8.6	8.8	10.2

Asterisk (*) denotes GLE $\geq$ 14.0.

High SES Whites and Orientals are the only groups which equal or surpass the average 6th grade GLE. By the 9th grade, High and Medium SES Whites and Orientals are the only groups who achieve at least the GLE of 9.0 at this grade. At grade 12, these same groups and High SES

Indians attain or surpass the 12th grade average national GLE. The achievement level of Negroes, Puerto Ricans and, to a lesser extent, Mexicans show little improvement between grades 9 and 12. For example, High SES Negroes at Grade 9 surpass the achievement level of Medium SES Negroes at grade 12, while High SES Puerto-Ricans and Mexicans at Grade 9 are within ½ year GLE of Low SES Puerto-Ricans and Mexicans at Grade 12.

(3) Reading Comprehension

Reading ability improves quite consistently for each racial and SES group through the years as shown by the following table:

	Grade 6			Grade 9			Grade 12		
SES:	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Negro	3.7	4.1	4.7	6.4	7.3	8.3	8.5	9.7	10.8
White	4.7	5.2	6.8	8.2	9.5	10.9	11.2	12.5	14.0
Indian	4.2	4.2	4.9	7.1	8.1	9.0	9.4	11.3	12.2
Oriental	3.4	4.6	6.1	8.1	9.4	10.2	10.7	11.5	12.5
Puerto-Rican	3.0	3.2	3.6	6.3	6.8	7.8	8.9	9.8	10.5
Mexican	3.7	3.9	4.5	6.7	7.7	8.7	9.4	10.0	11.0

Unlike Verbal Ability and Mathematics, in Reading Comprehension no 6th grade SES level achieves a GLE higher than any 9th grade SES group, and no 9th grade SES group is able to surpass its counterpart at grade 12. Further, for any given level of SES, the differences in performance of the racial and ethnic groups is consistent from one grade level to the next.

3.4.2 SMSA/Non-SMSA Comparisons for TOTAL, U.S. (All Regions Combined)

The tables below show the comparisons between metropolitan (SMSA) area students and non-metropolitan (Non-SMSA) students in Verbal Ability, Mathematics and Reading Comprehension.

	Grade 6			Grade 9			Grade 12		
SES:	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Verbal Ability									
Negro SMSA	3.8	4.3	4.9	6.7	7.5	8.4	8.6	9.4	10.9
Non-SMSA	3.7	3.9	4.4	6.1	7.1	8.2	7.5	8.8	10.0
White SMSA	4.8	5.5	6.7	8.3	9.5	11.4	11.0	12.8	*
Non-SMSA	5.7	6.1	6.5	8.0	9.4	11.2	10.5	12.5	*
Mathematics									
Negro SMSA	3.6	4.1	4.6	6.5	7.2	7.9	7.1	7.7	8.7
Non-SMSA	3.8	3.9	4.3	6.1	7.0	7.8	6.6	7.5	8.6
White SMSA	4.8	5.4	6.8	8.0	10.7	12.0	10.2	13.4	*
Non-SMSA	5.1	5.4	6.6	8.2	9.7	11.9	10.8	*	*
Reading Comprehension									
Negro SMSA	3.7	4.3	4.9	6.6	7.5	8.4	9.0	9.9	10.9
Non-SMSA	3.7	3.9	4.4	6.1	7.1	8.3	7.9	9.3	10.7
White SMSA	4.6	5.2	6.9	8.2	9.5	10.9	11.1	12.5	*
Non-SMSA	4.9	5.2	6.8	8.2	9.6	11.0	11.2	12.6	*

Asterisk (*) denotes GLE $\geq$ 14.0.

Negro Students

Except for Low SES students at Grade 6, SMSA students perform appreciably better than Non-SMSA students in all subject matter areas.

Among SMSA students, in Verbal Ability and Reading, High SES 9th grade scores are below 12th grade Low SES scores. In Mathematics, however, High SES 9th grade scores are above those of both Low and Medium SES 12th grade scores.

Among Non-SMSA students in Verbal Ability and Reading, High SES 9th grade students surpass Low SES 12th Grade students. Moreover, in Mathematics, High SES 9th grade students achieve higher scores than both Low and Medium SES 12th grade students.

White Students

In Verbal Ability, SMSA students generally achieve higher scores than Non-SMSA students. In Reading, the two groups are almost identical. In Mathematics, however, by grade 12, Non-SMSA students in Low and Medium SES levels perform significantly better than their SMSA counterparts.

For both SMSA and Non-SMSA, High SES 9th grade students perform significantly better than Low SES 12th grade students in Verbal Ability and Mathematics but not in Reading Comprehension.

3.4.3 Regional Comparisons by Grade, SMSA + Non-SMSA

Within a given grade and SES level for both Negro and White students the North usually has the highest achievement level, followed, in order, by the West and South. At grade 6, differences among regions are least and at grade 12 these differences widen appreciably. The extent of regional differences in GLE for a given racial group and SES may be illustrated by the table below for Verbal Ability, Grade 12:

	North			South			West		
SES:	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH
Negro	8.9	10.0	11.9	7.8	8.7	10.0	8.6	9.3	10.2
White	10.8	12.7	*	10.4	12.2	*	10.9	12.8	*

Asterisk (*) denotes GLE ≥ 14.0.

For Negro students, the high SES group living in the North achieves substantially higher than those in the South or West, whose scores approximate the middle (MED) SES Northern scores. The low SES Northern Negroes achieve at a level which is lower than the middle SES Western students but higher than the middle SES southern students.

Among White students at grade 12, Verbal Ability achievement scores among regions within any given SES level show differences of at most 0.5 GLE. That is, for any given SES level, regional variations are at most 0.5 GLE.

3.4.4 Regional and SMSA/Non-SMSA Variations in Average SES Test Scores (12th Grade Only)

1. Verbal Ability

When average SES 12th grade Verbal Ability test scores are ranked (from high to low) by region and SMSA/Non-SMSA, the following table results:

Verbal Ability

Negro	White
(1) West Non-SMSA	(1) North SMSA
(2) North SMSA	(2) West SMSA
(3) West SMSA	(3) West Non-SMSA
(4) North Non-SMSA	(4) South SMSA
(5) South SMSA	(5) North Non-SMSA
(6) South Non-SMSA	(6) South Non-SMSA

Among Negroes, the SMSA areas in the North and South have higher scores in Verbal Ability than their Non-SMSA counterparts. In the West, however, the non-SMSA score is significantly higher than the SMSA score--as a matter of fact, it is the highest score of any region. The West and North regions occupy the highest places in the rankings followed by the South SMSA and Non-SMSA areas.

Among Whites, in every instance SMSA scores are higher than comparable Non-SMSA scores. Further, the West Non-SMSA scores are higher than the South SMSA score.

2. Mathematics

For Negroes, as in Verbal Ability, the West Non-SMSA scores are the highest and the South SMSA and Non-SMSA scores are the lowest, as may be seen below:

Mathematics

Negro	White
(1) West Non-SMSA	(1) North SMSA
(2) North Non-SMSA	(2) North Non-SMSA
(3) North SMSA	(3) West Non-SMSA
(4) West SMSA	(4) West SMSA
(5) South SMSA	(5) South SMSA
(6) South Non-SMSA	(6) South Non-SMSA

Among Whites, North SMSA is again the highest scoring region. Non-SMSA regions in the North and West are approximately equal and are just below the North SMSA.

3. Reading Comprehension

Rankings by region and metropolitan characteristic are as follows:

Reading Comprehension

Negro	White
(1) West Non-SMSA	(1) North SMSA
(2) North SMSA	(2) West Non-SMSA
(3) North Non-SMSA	(3) North Non-SMSA
(4) West SMSA	(4) South SMSA
(5) South SMSA	(5) West SMSA
(6) South Non-SMSA	(6) South Non-SMSA

Among Negroes, West Non-SMSA leads the other regions; among Whites, North SMSA again has the highest scores. For Both groups, South Non-SMSA has the lowest scores.

3.5 Summary of Results

The relationship between socio-economic status and academic achievement documented in many other studies has also been demonstrated in this present chapter. Cross-comparisons of these relationships in terms of different racial-ethnic groups, various regions of the United States and metropolitan-non-metropolitan locations has given additional perspectives on this relationship.

In rate of achievement of the various SES levels, generally Low SES students appear to taper off much more rapidly than Medium or High SES students. At grade 6 differences among the three SES levels are relatively minor. By grade 9 (and increasingly at grade 12) the difference in achievement level between High SES students and Medium SES students is much greater than the difference between Medium SES and Low SES students. The disparity in achievement level between High and Low SES students increases substantially with increase in grade. Thus, SES levels appear to assume increasing importance in school achievement for all students.

Characteristic learning patterns are evident among the three types of achievement tests discussed earlier. Verbal Ability shows the characteristic decremental learning curve over grades, while Reading Comprehension is almost linear. For all races, Mathematics achievement appears to approach a plateau much earlier than other subjects, with the Negro students showing relatively little progress beyond the 9th grade. For all tests and races, the three SES levels show very similar growth patterns.

Documentation of Negro achievement for three SES levels shows some interesting comparisons with respect to other racial groups. In terms of national averages at grade 12, High SES Negroes have higher Verbal Ability scores than Low SES Whites and Indians, Low and Medium SES Mexicans and, Puerto-Ricans of all SES levels. In Mathematics achievement at grade 12, High SES Negroes perform better than Low and Medium SES Puerto-Ricans and Low SES Mexicans, while in Reading Comprehension, they surpass the scores of Low SES Indians and Orientals, Low and Medium SES Mexicans and all Puerto-Ricans.

When 12th grade High SES Negroes are compared against 12th grade Low SES Whites, the Negro students are higher in Verbal Ability and Reading--but only in the North. Low SES White students are higher in the South and West for Verbal Ability and Reading and higher in all regions for mathematics.

In Verbal Ability, for both metropolitan (SMSA) and non-metropolitan (Non-SMSA) areas, at each grade level High SES Negroes have approximately the same scores as Low SES White students. In Metropolitan areas, Negro students at grade 12 have approximately the same test score as 9th grade white students at all comparable SES levels. In non-metropolitan areas, however, 12th grade Negro students achieve at a much lower level than 9th grade white students for comparable SES levels.

In terms of regional variations among Negro students in Verbal Ability, Northern students achieve the highest scores, followed by the West and South. At grade 12, High SES Negro students living in the South are only slightly behind High SES students in the West, but only on a par with

Northern Medium SES students. The differences in achievement levels for the three regions are maintained for all SES levels over all grades.

In terms of SMSA/Non-SMSA differences, for the U.S. as a whole, in Verbal Ability, High SES 9th grade metropolitan (SMSA) students achieve at a level comparable to that of Low SES 12th grade SMSA students and they achieve at a much higher level than Low SES 12th Grade Non-SMSA students. The 12th grade Non-SMSA Low SES students perform at a much lower level than either the 9th grade High SES SMSA or Non-SMSA students.

Among Negroes living in metropolitan areas, Northern students outperform students of other regions at all comparable SES levels in Verbal Ability. Further, Medium SES students in the North are approximately at the same achievement level as High SES students living in the South and West. Non-Metropolitan students in the North achieve higher scores generally than metropolitan students in the South or West.

In the preceding analysis it may be noted that in many instances, the same level of SES for different racial groups does not lead to similar levels of achievement. For example, achievement levels of high SES Negro students are lower in most instances than Low SES White students. An examination of the SES index leads to some possible explanations. Educational level of the parents is the most highly weighted variable in the SES Index. Among Negro students, in particular, specified educational levels of their parents are not necessarily at the same academic standards as the same level in predominantly white educational institutions. Also there are differential dropout rates for the different racial and ethnic groups. Consequently, some groups may show higher achievement levels in

the higher grades because proportionately more of their lower achieving students have left school. This may be particularly so for Mexican and Indian-American students when compared with Negroes.

These considerations suggest that one must exercise great caution in trying to give causal explanations to these relationships for there are a host of mediating factors that may operate to produce these results. This statement is further reinforced by analyses in the next chapter which show that SES, family structure, parental involvement with one's children and race and ethnicity are closely intertwined.

List of References

Flanagan, J.C., et.al., The American High School Student, Pittsburgh, Pennsylvania, University of Pittsburgh, 1964.

Husén, T., et.al., International Study of Achievement in Mathematics. Vol. I and II. New York: John Wiley and Sons, 1967.

Lesser, Gerald S.; Fifer, Gordon; Clark, Donald H. Mental Abilities of Children From Different Social Class and Cultural Groups. Monographs of the Society for Research in Child Development, 1965, Vol. 30, No. 4.

Okada, T.; Stoller, D.S. and Weinfeld, F.D. "Dynamics of achievement: a study of differential growth of achievement over time". Technical Note No. 53, U.S. Office of Education, Washington, D.C., 1968.

Okada, T. and Stoller, D.S. "Dynamics of achievement: differential growth of achievement for Negro and White students by SMSA/Non-SMSA and region". Technical Note No. 54, U.S. Office of Education, Washington, D.C., 1968.

Shaycoft, M.F. The High School Years: Growth in Cognitive Skills. Pittsburgh, Pennsylvania: American Institutes for Research and School of Education, University of Pittsburgh, 1967.